

**ABSTRACT**

Display contrast in electro-optical display devices is improved using a drive circuit including pixel drive circuits and a common drive circuit. The pixel drive circuits are connected to pixel electrodes of the display device, and are operable to generate respective pixel drive signals that alternate between a first high voltage and a first low voltage differing in voltage by less than or equal to a process-limited maximum. The common drive circuit is connected to a common electrode of the display device, and is operable to generate a common drive signal alternating between a second high voltage and a second low voltage differing in voltage by more than the process-limited maximum. The common drive signal is asymmetrically bipolar with respect to the first low voltage of the pixel drive signal.